REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1, 2, 5, 6, 10-16, 18-20, 47, 48, 51, 52, 54-60 and 62-64 are in the case.

I. CLAIM OBJECTIONS

Claim 47 has been objected to because of the expression "said inert fluid gas". This has been amended to recite "said inert gas". Withdrawal of the claim objection is now respectfully requested.

III. THE OBVIOUSNESS REJECTIONS

Claims 1, 2, 5, 6, 10, 11, 19, 20, 47, 48, 51, 52, 54, 55, 63 and 64 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent 4,374,663 to Collin et al in view of U.S. Patent 2,794,681 to Suess and U.S. Patent 4,461,743 to Chowdhury. Claims 12-16 and 56-60 stand rejected under 35 U.S.C. §103(a) as allegedly over Collin et al in view of Suess and Chowdhury and further in view of U.S. Patent 3,411,716 to Stephan et al. Claims 18 and 62 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Collin et al in view of Suess and Chowdhury and further in view of U.S. Patent 5,801,265 to Wagner et al. Claims 1 and 47 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 3,351,634 to Ellis et al in view of Suess and Chowdhury. Those rejections are respectfully traversed.

As claimed in claim 1, the invention is directed to a reactor for containing a solid catalyst for a heterogeneous gas-phase reaction. The reactor is a fluid bed reactor

which comprises a grid, more than one inlet pipes for a molecular oxygen-containing gas extending into the reactor, surround means for surrounding a substantial portion of the inlet pipes in the reactor with an inert gas, and means for detecting a change in pressure of the inert gas surrounding the inlet pipes. The surround means are provided with a supply of an inert gas, and the inert gas surrounding the inlet pipes is sealed.

Claim 47 is directed to a reactor for containing a solid catalyst for a heterogeneous gas-phase reaction. The reactor is a fluid bed reactor comprising a grid, more than one inlet pipes for a molecular oxygen-containing gas extending into the reactor, surround means for surrounding a substantial portion of the inlet pipes in the reactor with an inert gas and means for detecting a change in pressure of the inert gas surrounding said inlet pipes. The surround means is provided with a limited supply of inert gas sufficient to replace minor leaks.

Suess is directed to the problem of leakage of cooling medium, particularly water, supplied to nozzles (col. 1, lines 23-27; lines 43-45). According to Suess, water is fed into the cooling jacket through conduit 5' and discharged from the cooling jacket through conduit 5" (col. 3, lines 65-66). Membranes (10a and 10b) detect a change in the amount of water supplied to and discharged from the conduits by registering a change in pressure of the water across the membranes (col. 3, lines 69-73). The amount of water is increased at the moment in which the amount discharged decreases because of a leakage (col. 4, lines 22-24).

The nozzle in Collin may be provided with a cooling jacket (item 7, Fig 2). The cooling jacket is provided with water as the cooling medium to prevent particles of reduced iron from adhering to the nozzles.

In the present invention, the inlet pipe is provided with a surround means which is provided with an inert gas and which is also sealed. Means are also provided for detecting a change in the pressure of the inert gas in the surround means.

Collin at col. 1, lines 61-64 clearly states that cooling the nozzle with air would not solve the problem that Collin is trying to achieve, i.e., to prevent iron particles sticking to the nozzle. Thus, as the disclosure of Suess is directed solely to the use of a liquid cooling medium, one of ordinary skill would not have been motivated to combine Collin and Suess in the context of the presently claimed invention. Furthermore, Suess requires a supply of water to the cooling jacket and a discharge of the water therefrom in order to detect the pressure change. That is, the cooling jacket is required to have an inlet and an outlet for the liquid and so is a continuous system. Suess would not work if the cooling jacket was sealed because, in a sealed system, the two membranes of Suess would register the same pressure and, if a leak occurred, the two membranes would still read the same pressure, albeit a lower pressure. In the present invention, the inert gas does not flow in a continuous system. Rather, it is a sealed system. Thus, again, one of ordinary skill would not have been motivated to combine Collin and Suess and, even if such a combination had been attempted (it is believed that such would not have occurred), the present invention would not have resulted or have been rendered obvious thereby.

Chowdhury fails to cure the above-noted deficiencies of Collin and Suess. Chowdhury does not describe a system in which changes in pressure in an inert gas are detected. This is admitted by the Examiner in the first sentence of page 8 of the Official Action dated March 14, 2005. Although Chowdhury discloses a heat transfer resisting

fluid such as nitrogen, carbon dioxide, air or water, Collin is quite clear that a gas is inappropriate for solving the problem of particles sticking to a nozzle and therefore solves the problem by employing a liquid. Thus, Chowdhury does not cure the deficiencies of the teachings of Collin and Suess, and does not give to a prima facie case of obviousness as alleged by the Examiner. Withdrawal of the obviousness rejection based on the combined disclosures of Collin, Suess and Chowdhury is accordingly respectfully requested.

With reference to the rejection of claims 12-16 and 56-60 Collin view of Suess and Chowdhury and further in view of Stephan et al., and the rejection of claims 18 and 62 over Collin in view of Suess and Chowdhury and further in view of Wagner et al., it is believed those rejections should also be withdrawn for the same reasons as urged above in connection with the rejection over Collin, Suess and Chowdhury. Stephan and Wagner fail to cure the above-discussed deficiencies of Collin, Suess and Chowdhury, and a such do not give rise to a *prima facie* case of obviousness. Withdrawal of those rejections is respectfully requested.

Referring to the rejection of claims 1 and 47 over Ellis et al in view of Suess and Chowdhury, the deficiencies of Suess and Chowdhury have been discussed in detail above. Ellis is directed to introducing a stream of superheated gas into a fluidised bed reactor (col. 5, lines 13-1 6). In order to maintain the superheat gas injection temperature, suitable insulating means are employed (col. 2, lines 49-52). Thus, in Ellis, the gas is required to maintain its heat. If the cooling water of Suess was employed in Ellis, the water would equilibrate the temperature of the water and gas, with the consequence that the gas would become cooler. Thus, the objective of Ellis to

maintain heat would not be achieved. Consequently, there would have been no motivation for one of ordinary skill to combine the disclosures of Ellis and Suess. Moreover, for the reasons explained above, Chowdhury does not cure the deficiencies of Ellis and Suess.

For all of the above reasons, it is clear that one of ordinary skill would not have been motivated to combine the disclosures of Ellis, Suess and Chowdhury. Absent any such motivation, a *prima facie* case of obviousness has not been generated in this case. Reconsideration and withdrawal of the outstanding obviousness rejection of claims 1 and 47 are accordingly respectfully requested.

Allowance of the application is awaited.

Respectfully submitted,

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